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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,652	11/24/2003	Seong-Yong Hwang	21C-0098	4656
23413	7590	06/14/2005	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			CHOWDHURY, TARIFUR RASHID	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/720,652

Applicant(s)

HWANG ET AL.

Examiner

Tarifur R. Chowdhury

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,7-11,15,16 and 18-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,6,12-14 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 4,5,7-11,15,16 and 18-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 05/20/05.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Mori et al., (Mori), USPAT 5,712,493.**

6. Mori discloses (col. 6, lines 49-56, 63-64; col. 7, lines 1-9, 25-30, 43-49; col. 8, lines 1-7) and shows in Figs. 1-3, a circuit device comprising:

- electrode terminals aligned in a plurality of columns along a first direction parallel to an edge line of a semiconductor substrate and aligned in a plurality of rows along a second direction perpendicular to the first direction; and
- bumps disposed on the electrode terminal.

Mori also discloses (col. 8, lines 1-7) that distances between adjacent two electrode terminals aligned in the second direction are uniform.

Mori further shows in Fig. 11 that the bumps (30) has a rectangular shape when viewed from an upper side of the bumps.

**7. Claims 1-3, 6, 12-14 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Takenaka et al., (Takenaka), USPAT 6,297,868).**

8. Takenaka discloses (col. 3, lines 18-31, 52-66; col. 5, lines 4-63) and shows in Figs. 1-5, a display device comprising:

- a display panel (1) having a display area on which a gate line (2), a data line (3) perpendicular to the gate line and a plurality of pixels are formed and a peripheral area on which electrode pads (not shown) extended from the gate and data lines are formed, the peripheral area being disposed adjacent to the display area; and
- a drive IC having electrode terminals aligned in a plurality of columns along a first direction parallel to an edge of a semiconductor substrate and aligned in a plurality of rows along a second direction perpendicular to the first direction and bumps disposed on the electrode terminal, the drive IC being electrically connected to the electrode pads.

Takenaka also discloses that the shapes of the bumps is not limited and different shapes can also be used such as shows in Figs 8(a)-8(d). (col. 8, lines 39-43) and that the drive IC is electrically connected to the display panel by means of an anisotropic conductive film.

Accordingly, claims 1-3, 6, 12-14 and 17 are anticipated.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**11. Claims 6, 12-14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori as applied to claims 1-3 above. .**

12. As to claim 6, using bumps of different shapes such as pentagon, hexagon, octagon or circle when viewed from an upper side of the bumps is common and within

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the level of ordinary skill in the art and thus would have at least been obvious to optimize the performance of the device.

As to claims 12-14, Mori does not explicitly disclose that the display device used in his invention is an active matrix type. However, it is common and known in the art to use an active matrix display device for several advantages such as to reduce cross talk. Further, it is inherent for an active matrix display device to have a display area on which a gate line, a data line perpendicular to the gate line and a plurality of pixels are formed and a peripheral area on which electrode pads extended from the gate and data lines, the peripheral area being disposed adjacent to the display area and a driving IC connected to the electrode pads.

As to claim 17, Mori discloses the use of anisotropic conductive film to connect the drive IC to the display panel.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

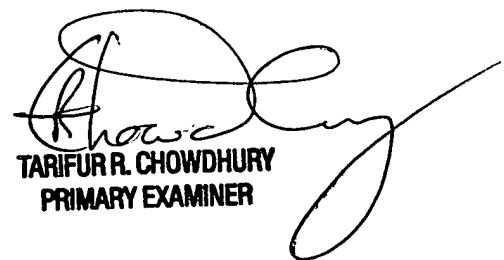
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC  
June 07, 2005



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER